

Amendments to the Claims:

Please replace the claims, including all prior versions, with the listing of claims below.

Listing of Claims:

1-10. (canceled)

11. (previously presented): An optical transmission system, comprising:

a first optical fiber having a first length and a first dispersion compensation unit and at least a second optical fiber having a second length and a second dispersion compensation unit,

wherein in transmitting first optical signals at a first data transmission rate the compensation amounts in the first and second units are dimensioned in such a way that the first and second lengths are under compensated by approximately the same under-compensation amount, and

wherein, in transmitting a second optical signal at a second data transmission rate greater than the first data transmission rate, a pre-compensation unit for pre-compensating the second signal is arranged upstream of the first length of optical fiber, the pre-compensation unit providing a pre-compensation amount between 0 ps/nm and -2000 ps/nm.

12. (previously presented): The optical transmission system according to Claim 11, wherein the system is comprised of more than two optical fibers each characterized by having a length and a dispersion compensation unit.

13. (currently amended): The optical transmission system according to Claim 11, wherein the second data transmission rate ~~can be~~is at least double the first data transmission rate.

14. (previously presented): The optical transmission system according to Claim 11, wherein the pre-compensation amount is dependent on the size of the launch power of the second optical signal being transmitted at the second data transmission rate, and on the type of fiber used for transmission.

15. (previously presented): The optical transmission system according to claim 11, wherein the first and second optical fibers are a standard single mode fiber or a non-zero dispersion-shifted fiber.

16. (previously presented): The optical transmission system according to claim 12, wherein the optical fibers are a standard single mode fiber or a non-zero dispersion-shifted fiber.

17. (previously presented): The optical transmission system according to Claim 15, wherein the pre-compensation amount for a standard single mode fiber is approximated by the following relation:

$$D_{PC} = (-11 + 1.665 * P_{\text{launch}} / [\text{dBm}]) * D_{\text{inline}} - 270 [\text{ps/nm}]$$

where

P_{launch} is the launch power of an optical signal being transmitted at the second data transmission rate, per length of optical fiber, and

D_{inline} is the average under-compensation amount of the dispersion compensation units.

18. (previously presented): The optical transmission system according to Claim 15, wherein the pre-compensation amount for a standard single mode fiber is approximated by the following relation:

$$D_{PC} = (-12.5 + 1.2 * P_{\text{launch}} / [\text{dBm}]) * D_{\text{inline}} - 25 [\text{ps/nm}]$$

where

P_{launch} is the launch power of an optical signal being transmitted at the second data transmission rate, per length of optical fiber, and

D_{inline} is the average under-compensation amount of the dispersion compensation units.

19. (previously presented): The optical transmission system according to Claim 15, wherein the under-compensation amount during the transmission of optical signals via a standard single mode fiber is in the range 10 to 80 ps/nm and transmission of optical signals via a non-zero dispersion-shifted fiber is in the range 5 to 60 ps/nm.

20. (previously presented): The optical transmission system according to Claim 12, wherein the lengths of optical fiber in the optical transmission system are between 40 km and 120 km long.

21. (currently amended): The optical transmission system according to one of the Claims 12, wherein an optical fiber and a length of the optical fiber having a dispersion

compensation unit form an optical transmission module, and the optical transmission system comprises a plurality of optical transmission modules arranged in series.

22. (previously presented): The optical transmission system according to Claim 11, wherein the optical transmission system has a bi-directional operating mode.